

## The Bruker FT-IR spectrometers

**Category:**  
C. Particle Characterisation

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### Short technology description/Overview:

Infra-Red (IR) spectroscopy is the technique to measure vibrations between atoms in a molecule. The outcome could be typical signals for certain functional groups.

### Main Features (Equipment Capabilities):

We have two Fournier-Transform Infra-Red spectrometers. Both are Bruker Tensor 27's. One of the machines is equipped with a liquid nitrogen cooled MCT-detector for extra sensitive measurements. The other is connected to a Bruker Hyperion 2000 IR-microscope. This microscope has also a liquid nitrogen cooled MCT-detector. Both machines are controlled by Bruker's OPUS software.

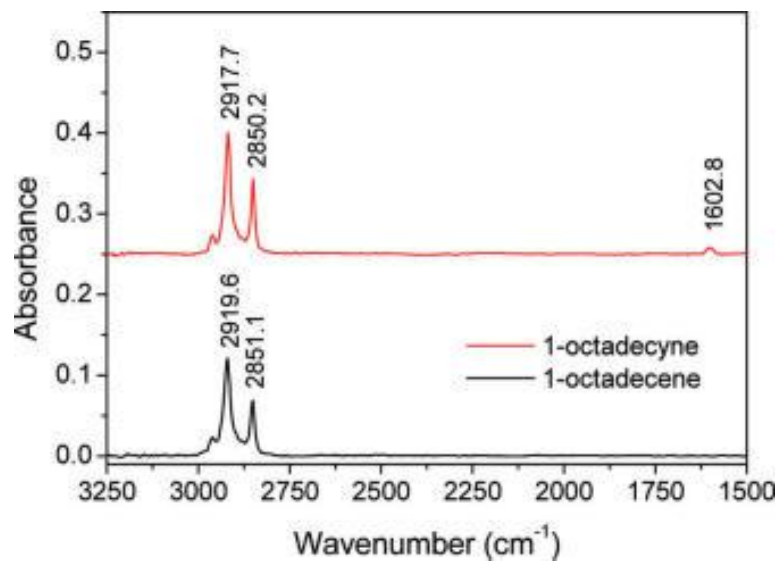


Available accessories: Harricks Auto-Seagull for reflective absorption spectrometry (IRRAS) (angle from 85° till 10°); KBr pellet holders, liquid cells and salt crystals for film experiments. Also a Platinum ATR diamond unit is available for fast and simple IR experiments.



The microscope has an 15X IR objective as well as a 15X GIR-objective. The stage is XY-controlled by the software and/or by a joystick

### Typical Samples & Images:



Part IR spectrum of an ATR measurement of monolayers (Luc Scheres, Marcel Giesbers and Han Zuilhof, *Langmuir*, **2010**, 26 (7), pp 4790–4795) Clearly visible are the C-H stretch vibration of the aliphatic chain and in the case of the attached alkyne the remaining C=C stretch vibration.

Of course also starting materials and products of syntheses can be measured.

*Any further Information:*